

# Centre for Applied Social Sciences



**Proceedings of the  
Regional Conference on Gender Issues in  
Community-Based Natural Resource Management**

**C B N R M**

**(Cresta Lodge, Harare : 24 – 27 August 1998)**

Compiled by

**Nontokozo Nabane**

**September 1998**

# University of Zimbabwe

# **CENTRE FOR APPLIED SOCIAL SCIENCES \***

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**Zimbabwe**

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**The opinions expressed herein are those of the authors and do not necessarily  
reflect the views of CASS or IUCN**

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# **Conceptual Manoeuvring Using Gender as an Analytic Category in Community Based Natural Resource Management**

**Sara Mvududu**

## **1. Introduction**

In this paper I will begin by revisiting the concept of gender, then focus on the different gender analysis approaches and finally the gender issues in community based natural resource management. Gender as used in this paper refers to, "culturally and historically specific concepts of femininity and masculinity, and the power relations between men and women", Serijivers (1993). Gender according to this definition is not the same as sex, it refers to the social construction of sex and sex roles and social relations between the sexes. Because gender is a social construct, the roles of women and men may differ from one place or culture to another and may change overtime. Sex, on the other hand, refers exclusively to the biological differences between women and men.

Increasingly women have become the subjects of intense research inquiry in development in general and agricultural development in particular, only relatively recently has the focus been on natural resource management. The failure of many development projects in the Third World to deliver the fruits of sustained economic growth equitably, and the unwarranted side-effects of development, among other things have brought gender issues to the forefront of sustainable development and biodiversity discourse. Feminist epistemologies have served as a springboard for ideas regarding the conceptualization of nature and the analysis of women's nature through eco-feminist scholarship. The resulting debates have sparked much interest in relating these concepts to environmental conservation and sustainable development

Studies from all the major world regions show that despite differences in cultural practices, women have used diverse livelihood strategies to maintain their households and in some cases providing additional household income as well. More importantly, in going about their business, women have evolved resource management practices that emphasize harmony over domination.

## **2. Gender Issues and Concerns in the context of Community Based Natural Resource Management and Development (CBNRM)**

Despite the fact that gender is universally one of the key ways in which societies and cultures demarcate rights and responsibilities, the different roles of women and men in natural resource frequently have been ignored in CBNRM activities. According to Thomas-Slayter (1995:196) gender matters in the context of CBNRM and development policy primarily for four reasons. First, the responsibilities for managing CBNRM are designed according to gender. Second, women often must undertake new

responsibilities without adequate knowledge, technology, resources and time. Third, women are the majority of the rural constituency and therefore the most affected by environment and development programmes and policy. Fourth, the responses to the environmental crisis are largely initiated collectively by women who see the basis of their livelihood system eroding.

Gender shapes the opportunities and constraints women and men face in securing viable livelihoods and strong communities across cultural, political, economic, and ecological settings. If policy is to reach the grassroots with effective prescriptions and action for sustainable management of resources, it will have to address the concerns of men and women and the way in which both genders, individually and collectively, relate to the state, the economy and the land. Four analytical categories: women's status in its political, social, and legal dimensions, gendered land and property relations, gendered labour and livelihoods and gendered knowledge are useful in this analysis.

Rocheleau (1993:1) notes that a growing body of feminist research also questions the organisation of distinct groups and their diverse experiences within simple, one dimensional analyses of economy, environment and community. A number of feminist authors treat gender, class, race and culture (Harding, 1989; Hartsock, 1989; Fraser, 1987; Hooks, 1990; Stamp, 1989; Lourde, 1989; Merchant, 1989) as axes of identity and difference that are socially constructed and embedded in relations of power. These attributes can determine the course of social economic and ecological change and may also shape people's experience of those changes.

In community based natural resource management, the question of women's and men's roles in the management and the impact of forest based production on the status of women are connected to larger questions of ecology and the forms of property that exist. In the final analysis I argue that at the macro level, some agricultural or to be specific natural resource and related economic policies do not reach women and often discriminate against them. In the Gokwe case study, export incentives support policies, including subsidies, loans and foreign exchange rate variations and tend to increase land use for export crops (such as cotton, a men's domain). This is at the expense of land available to women who over-exploit the land left to them to cover household food needs, thus becoming agents for increasing environmental degradation.

Women have traditionally played a silent, yet central role in the management and sustainable use of biological resources and life support systems. Their relationship with their environment is holistic, multidimensional and productive. Some of the current technology has the capacity to undermine the control women have over these systems and breaking down the linkages that made evolution possible. Conservation of biological diversity will not be possible if women are marginalised from resource management and production.

It is important to know whether men and women of particular societies have different such knowledge and roles, whether these differences are recognized and whether women are more environmentally protective. The question of outcomes, that is, of whether women behave in a more environmentally friendly way is of course different. Pursuing these questions is particularly difficult because gender has not been a focus in many studies, and there is a further problem of rigour (Arderner 1975). What is known about women's environmental perception is largely collected from male informants. Even where this is not the case, the domination of male worldviews and

that absence of (or the politics of) expressing a female vocabulary to articulating dominant environmental models is a major hurdle in the interpretation of what women themselves say. The interventions made within the niche in the commons with a view to preserving for future generations pre-supposes a genuine understanding of the ecological processes and a consciousness at least implicit of the consequences of over exploitation.

The rights of an agnatic core of kin and the exclusion of others are central to the commons system, the ecological understanding and management decisions appear to be held and made by dominant males. This is as one might expect, where, survival depends on preventing resource over-exploitation environmentalism is of central political significance and reflects other pervance power male dominated. Women here are not inherently destructive of, or different to environmental sustainability but may experience social relations to form environmental knowledge or the right to express them and from direct property relations. We also see from this example that it is a techno-centric (that is, an instrumental) relation with nature which is revealed rather than a bio-ethical view management in the interests of human survival was behind the system.

At the very least we need to interrogate the meaning of, say, the protection of certain species by indigenous people's before assuming they are non-specialist. Religious taboos controlling resource use certainly do protect elements of environments, but materials analysis of what is protected and why as well as who the major beneficiaries are must precede any generalisations about the absence of species.

One consequence of the absence of gender analysis in the environmentalist discourses is the failure to recognize that the environmental relations of women reflect prevailing gender ideologies and struggles and that "Positive" environmental management is based upon coercive social relations. The environmental management perspective has tended to radically under theorise the gender, social, legal and political processes of environmental regulation themselves. Models of sustainability tend to take the form of equilibrium between human generated demands on the environment (in terms of population, pollution etc) and the carrying capacity of the global environment with respect to these demands. However, almost entirely absent from such models are sociologically informed discussions about what kind of institutional framework would be required to maintain such equilibrium. In the absence of theorising the reader is left to suppose that existing economic structures (power – structures) and legal / political institutions would remain broadly in place but would be given a new set of policy priorities.

History provides some rich examples of how the idea of conservation and the image of the environment have been transferred from one culture to another. Conservation in 19th century colonial Africa e.g. was often carried out for paternalistic reasons that paid scant regard to indigenous experiences or cultures. Rural populations often possess important knowledge about the environmental management, but this has been devalued over time by the penetration of western scientific knowledge and the search for "technical fixes" which evade distribution issues entirely. The discourse surrounding environment and development is not a neutral, convergent discourse but one reflecting both divergent historical experiences and different interpretations of those experiences.

Cecile Jackson (1994:125) in her article on " Gender Analysis and Environmentalism" has observed that Ecocentric environmentalism suffers from essentialism in relation to both women and environments. Women are conceived of as a unitary category with universal characteristics, which transcend the time, place and circumstances of their lives. Ecofeminist discourses are innocent of gender analysis in which masculinity and femininity are relational socially constructed, culturally specific and neopopulated categories. Ecofeminists, like radical feminists, seek to recognize and revalue the feminine. A key problem with ecofeminist approaches is that they fail to recognize either the diversity of lived environmental relations which different women experience, which mediate environmental relations and the ebb and flow of competing environmental ideologies. Accounts of how class relations impinge upon resources access reveal considerable variations e.g. the poor may make particularly intensive use of commons; and levels of inequality may be reduced by access to common property resources; though the commons may be captured by the community leaders and inequality deepened and used for grazing purpose.

Gender differentiation means that men and women of the same household relate to resources in different ways and these variations are inserted into class relations. But the outcomes are not predictable; poor women may be more or less environment friendly in their behaviour than poor men or rich men/women depending on their rights, responsibilities, knowledge, and bargaining positions within their households and communities.

This then brings out the problem of unitary conceptions of households that underlies the failure to perceive some contradictions generated by gender relations for environmental conservation. Livelihood strategies for men and women within a household vary and reflect gender relations - women may seek an outcome which can imply harmful resource use. For example beer brewing in Southern Africa is both a means by which poor women recruit farm labour and an activity which for many women generates independent cash incomes, yet beer brewing requires large amounts of fuel and contributes significantly to deforestation. Brick moulding and the burning of the bricks that is largely a male activity, also causes massive deforestation.

In addition to race/class divisions women are dis-aggregated by age and life cycle in their environmental relations. Although wood and water are generally said to be collected by women, we find that not all women bear this burden equally and many delegate this responsibility to sons, wives, or unmarried daughters especially whereby scotchcarts are used. What this case shows is that even in a situation of subordination women are able to bargain on the basis of their labour power for concessions, which are in their individual interest and not those of the household as a unit. It also shows that resource degradations is not only caused by poverty and that low population density can be implicated in environmental degradation. In some ways during the liberation struggle when construction of contour ridges was resisted.

We need to consider the degree to which environmental conservation by a wide range of agents frequently seems to be based upon coercive social relations. Democratic participatory forms of development are advocated widely for sustainable development, yet it may be that these are not compatible.

If the environmental relations of women embody their subordination then why do they as is evident, mobilize to repair the environment as in the gully reclamation

programmes under the food for work? Environmental protests by rural women cannot be disembodied from livelihood systems, for threatened resources often mean threatened subsistence. This may well mobilize women to protest. But since the moral economy itself is imbued with gender inequality, such struggles are not necessarily progressive for women - nor, as we point out above, are they driven by environmentalism.

What we have seen in colonial Southern Africa, on the other hand, was a struggle against the control of patriarchal elders and the state. Expressed through resistance to conservation technologies and planning, or via "everyday forms of resistance" like migration and non-co-operation with marriage transactions (Beinart 1989; Drinkwater 1989; McCracken 1987; Cheater 1989; Lover 1989). Gender struggles and those to conserve environments are as likely to clash as to coincide. In various discussions, we have found that assumed and asserted complementarities of women's gender interests and environmental interests derive from the specific (and flawed) conceptualisations of women and nature in different environmentalism and the absence of gender analysis. Linking women with nature is part of a construction of difference, it affirms women as other, prevents more useful gender analysis and has potentially damaging practical consequences. Our analysis has also revealed the limitations of an exclusion focus on poverty driven environmental degradation -environmentally damaging behaviour also results from gender interests and ideologies. Finally we have questioned the wisdom of assuming that equity in, and democratisation of development is not necessarily compatible with conservation and sustainable use of resources.

The application of gender analysis to environmental issues would seem a preferable route to understanding the interactions of gender relations and environmental relations. This would include what Bina Agarwal (1991) has termed a feminist environmentalism. In this conceptualisation, the link between women and the environment can be seen as structured by a given (gender and class caste/race) organisation of production, reproduction and distribution. Ideological constructions such as gender, of nature and or the relationship between the two, may be seen as (interactively) a part of this structuring but not the whole of it (Agarwal 1991: 71).

Broadly speaking CBNRM and Environmentalist systems exist to resolve critical environmental and natural resource management issues that can be summarised broadly as:

- quality of atmosphere;
- water quality;
- loss of soil productivity;
- loss of genetic diversity;
- deforestation;
- toxic contamination;
- hazardous materials;
- depletion of indigenous and dependence on imported resources.



### 3. Gender Analysis Approach

Gender analysis approach presents a holistic interdisciplinary approach to development, which is seen from economic, historical, legal, and general social science perspectives. This leads to a better understanding of the problems and therefore to better solutions. It is based on the assertion that women interact with the environment with specific gender relations and that these gender characterised uses of resources need to be the focus of analysis.

An approach to ecological research involving local populations, their knowledge and activities as integral factors has rarely been used. In my thesis for example the research results indicate this approach can be an effective tool for understanding the role of local people in promoting sustainable natural resource use and development. In identifying and understanding human and natural resource environment interactions the following questions can be addressed. How diverse are the forest products people use? How are these resources renewed? How do people modify ecosystems in order to change resource production?

Gender analysis for the purposes of this paper will be defined as a systematic effort to understand and document the distinct roles and responsibilities of men and women and how they inter-relate, in a given social, political, economic and ecological environment. For example Moser's (1993) conceptual framework and methodological tools for incorporating gender into planning is based on the identification of the triple role for women in society (reproductive, production and community management) and fundamental analytical distinction between practice and strategic gender needs. The principal benchmarks of this conceptual framework are the levels of interactions and the systems of delineation of gender roles, constraints and opportunities.

For this analysis a gender framework can be adopted from Overholt *et al* (1991) which uses four interrelated components: activity profile; analysis of factors influencing activities; access and control and project cycle analysis. Gender and age denomination identifies whether women, men, their children, or the elderly carry out an activity; reveals gender patterns in the work activities; and is the key to identifying subsequent gender effects. Time allocation specifies what percentage of time is allocated to each activity and whether it is seasonal or daily. Activity focus specifies where the activity is being performed (in the home, in the family field or in the outside community) reveals female mobility and carries implications for community based natural resource management delivery systems. The analytical framework provided by Overholt *et al* (1991) is a useful device for understanding the roles of men and women in a society and the external forces that may affect community based natural resource management planning. The analysis recognises in every context that it is relevant to determine the gender-based division of labour and to understand the forces that act as constraints on this division or that act to change it.

The discussion on gender differentiation and gender roles indicates that one can not easily separate gender from other factors in socio-economic dynamics. It is linked directly and indirectly to scarce natural resources like fertile land whose efficient management and efficient presentation becomes increasingly important. The gender natural resources dynamics interacts at all levels from household to national international vice versa. Systems of delineation of gender roles, constraints and opportunities male and female role distinctions have been shaped by historical

geographical, climatic, economic ethnic, ideological, religious and external factors and these distinctions have been embodied into the judicial, economic, institutional and educational systems. Such factors and systems must form a key element in any effective conceptual framework for gender analysis. The cultural and socio-economic characteristics of local people including the gender division of labour forms the basis for measures to promote the sustainable use of natural resources, alleviate poverty raise the quality of human life and create positive support for protected areas (FAO 1992:7 CLONES 1992:9).

As "bearers of knowledge and practitioners of the science of survival" these rural women "hold the threads to past knowledge of biodiversity and the skills needed to weave the web of livelihoods and living things" (Rocheleau 1987). Bonnard and Scherr (1993) argued that there is a need to go beyond simple gender distinctions and look at additional stratifiers. Such as the individual producers, access to resources, including user rights and control over the use of and benefits from a particular resource in designing agroforestry interventions and assessing policy or programme impacts. The study reveals some of the difficulties in separating activities and effects by gender in households where agroforestry decisions are often shared. The results of their study show that species choice, tree product marketing and use and the soil, conservation and fertility management practices are not clearly differentiated by gender but rather more variables across the marital status of women.

Bonnard *et al* (1993) suggested that although gender is often a useful distinction for analysis and project design, it is in some cases too broad a generalisation to capture some of the fundamental difference among female producers. Their findings support the contention that women's needs require explicit attention. They also suggest that the design and assessment of community based natural resource management interventions ought to go beyond simple gender distinctions and look at additional stratifiers such as individual producers access to resources including use rights and control over the use of benefits from a particular resource.

In relating use and need for a particular resource I find Rocheleau's (1987a, and 1990) multiple user approach valuable for assessing the use of land and other natural resources. An important criterion to distinguish the population is "multiple user" and "multiple uses" of resources. One can further distinguish types of land users, by activity, by tenure (ownership) in terms of access and by unit of organisation.

Traditional economics and most contemporary economists do not perceive the role of women and gender issues in particular involved as an integral part of the socio-economic dynamics. However, in view of contemporary ecological dynamics in general and specifically in rural areas, economists need to re-evaluate their theoretical perceptions and practical methodologies and see women as significant agents of production, marketing and consumption with different and distinct behaviour patterns. Indeed economists need to view women as actors to be accounted for and be dealt with and not apply as "victims" to be coped with through welfare schemes.

As Mook explains, in Clones (1992: 4), the significance of gender distinctions is not just as a means of categorising labour or household headship, but as a key to understanding structures and actions. These include production relationships within and across households, the setting of goals and priorities, the mobilisation of resources,

willingness to take risks and the right to benefits derived from increased farm production.

There is also a need for sociological analysis in CBNRM that requires the analysis of the following issues:

- equity issues, in relation to property rights considerations in collectively adopted natural resource management;
- the problems that community factions present for collective adoption;
- the degree of prior community organisation and the role of community organisation and social learning in collective adoption; and
- the role of indigenous leadership in collective adoption.

One of the basic tenets of my paper, for example, is the belief that unless fundamental equity is assured community members will not perceive benefits to their self interest and hence will not sanction community based natural resource management projects or participate in their implementation. The issue of equity permeates two closely related factors, property rights and community factionalism. These structural factors strongly affect equity in the distribution of project benefits. This differential distribution of collective benefits has two important consequences it can create resistance to collective adoption leading to project failure and it leads to problems of inequity on the poorest strata.

Models, which acknowledge women's decision-making power and their management responsibilities, permit stronger arguments for increasing the flow of resources to women. As noted two most salient areas of current research are: analysis of the gender patterns of labour and management within the household and analyses of the gender patterns of access to, and control over resources, both within and outside the household. Both are important for policy reasons; they have direct effects on a nation's ability to improve natural resources productivity and the well being of rural families who are dependent on these resources. Understanding the gender division of responsibility for labour, management and disposal of production is critical for understanding how and why households allocate their resources as they do. Understanding the nature and degree of women's access to productive resources permit intelligent efforts to release constraints to other increased productivity.

By documenting women's contributions to the household and the nature of their fallback positions, such research also clarifies women's ability to bargain to protect their own interests and those of their children. (Borooah *et al* 1991) It has been suggested that poverty has a gender bias, with women and children being the prime victims of unsustainable development. The vicious circle of poverty and deteriorating natural resources must be broken and it is now part of the conventional wisdom in development and environmental circles. Those who must wrest a living from the land are hardest hit by desertification, deforestation and other kinds of environmental degradation and by misguided economic and development policies. I argue that resource management and development professionals cannot afford to ignore the relations of gender conflict, co-operation, and complementarity that shape the natural resource landscape.

While the importance of involving women in participatory CBNRM is clearly documented, and now well accepted, in aid and other donor agency programmes (Simmons, 1980:39, in Breckin, *et al.*, 1984), the implementation of programmes to actively involve women in many areas is a difficult task. This is not only due to resistance by traditionally male-dominated agricultural and forestry agencies, but also because many traditional local communities are not used to giving major community involvement roles to women (Breckin, *et al.* 1984).

#### **4. Gender Sensitive Approaches to Community Based Natural Resources Research Management and Conservation.**

To focus on women within a gender sensitive framework is not only to investigate the layers to its most peripheral boundaries or its darkest depth but also to examine the interconnections, the history as well the context that shape or restrain cultural diversity in natural resources. It is also a study of resistance at the margins, replete, as we have found with cases wherein women developed highly sophisticated knowledge and strategies despite extremely constraining power structures and dominant paradigms.

In my paper, for example, I have chosen to be inclusive rather than exclusive because the management of natural resource diversity depends on a multitude of factors. My approach has been tangential rather than direct because I felt that in attempting to capture the essence of men's and women's roles in the management of agroforestry and other natural resources, I had to inquire into the effects of development trajectories on their lives. This included the cultural definitions of their status and their roles in society, and the cognitive frameworks and local knowledge they bring to bear in their decision - making regarding what plants to keep and what plants to destroy. I was led to focus on the concept of politics of disappearance and the related puzzle of persistence in assessing the existing agroforestry practices. Thus I was forced to ask why certain crops and varieties are kept even when they no longer represent the most profitable ventures, and why certain beliefs persist even when the market dictates that they be replaced with more efficient and productive alternatives.

Women in development-projects have sensitised the global community to women as critical actors in sustainable development. Their role in providing labour to productive activities and the need to increasingly integrate them into the mainstream of production have been emphasised. Less attention has been given to the gendered division of labour and the distribution of rewards in a rural economy. Little attention has been given to the marginalisation of women in the decision-making process. Ecofeminist critiques of western science and conventional models of development see the undervaluing of women as going hand-in-hand with the delimitation of indigenous knowledge and local people's claim to ecologically sound resource management practices. A questioning of dominant paradigms and recognition of the power of persistence in cultural memory to full scale integration can reclaim women's role as equal partners in natural resource development and conservation.

There is no dearth of studies to support the connection between women's role in subsistence and their command of an extensive body of knowledge about animals, water and soils; despite the tension between the resistance of such knowledge to change, and therefore its persistence and the adaptation of its tenets to powerful external forces. In general, women are more insulated than men from the political and

technological forces that bring about homogenisation. For this reason they have a better chance of cultivating the memories that favour persistence over disappearance of biodiversity. This knowledge is rooted not so much in theory as in practices in dealing with everyday realities and everyday needs.

The gender variable is central to positioning both men and women vis-à-vis institutions that determine access to land, to other resources and to wider economy. Gender analysis allows one to conceptualise gender in a study for the purpose of desegregating and interpreting information about functioning of individuals, households and community organizations in managing their natural resources. This paper situates the analysis from political, cultural ecology, institutional, community organisation identified issues, themes relevant to understanding the role of gender in managing natural resources, agroforestry. It argues that a new integrative approach must emerge to conceptualise the ecological and organisational complexity.

Farmer involvement in community based management of natural resources research is limited by inadequate funding, institutional policies and hierarchies, disciplinary specialisation and incompatible personalities. Opportunities abound for involving farmers in research as providers and recipients of information, as participants in determining priorities and ensuring practicality of methods, subjects for on-farm investigations, and as project evaluators. Farmers also need to take more of an initiative in getting involved in the political process that set the stage for natural resource research.

I argue that women have a vivid knowledge of their local situations and can provide insights into strategies for environmentally sustainable natural resource utilisation and management. However, despite these obvious merits women's knowledge has rarely been incorporated into science or development planning; this has resulted in the loss of valuable knowledge and in erroneously planned projects. I assert the need to incorporate women's knowledge if the goals and aspirations of sustainable natural resource management are to be realised. In addition, women's alternative strategies may provide key ingredients in schemes that are formulated to meet food needs and are at the same environment friendly.

If gender issues are to be given explicit attention within CBNRM research and technology development, then an alternative analytical framework is required. Such a framework should identify the different sets of conditions that characterise the economic participation of women and men in small farm systems and view the integrated farming systems as a gendered system of production and reproduction. The purpose of such a framework is not only to examine existing evidence with greater rigour, but also to generate specific hypotheses, data, and methods that break down gender biases within agricultural research and extension. A number of problems that must be addressed to build an alternative framework include:

- Overcoming the methodological division between technocratic and social science research that challenges the integration of quantitative and qualitative methods and data.
- Resolving time conflicts, such as the time scale that natural resource management research institutes or donors demand for CBNRM but that cannot accommodate the amount of time that is required in taking sociological

approaches. (Funding for scientific research into minor food crops and technologies for non-farm activities is extremely scarce).

This paper identified five key avenues for science and technology (S&T) research and policy intervention that would support women's environmental perceptions, needs and interests. These address the goals of S&T for environmental management and development, and focus on the significance of women's equitable participation and conceptual authority in agenda-setting for the use of S&T for sustainable and equitable development. The five pathways that are suggested in this paper are:

- Ensuring women's environmental health and seeing it as spring boarding for appropriate S&T interventions;
- Using S&T in a gender-sensitive manner to alleviate women's poverty through research and policy to meet their stated environmental perceptions, needs and interests;
- Supporting women's micro-enterprises through environmentally sound and pertinent S&T innovations and interventions;
- Guaranteeing women's full environmental literacy through access to formal and informal environmental education, and to relevant S&T expertise and information for their increased participation in community based environmental decision making; and
- Maintaining women's participation in national level environmental decision making through the development of gender sensitive information technologies and approaches to environmental management.

While micro-level data on women's situations might be useful, the feasibility of this approach in developing countries where men and women experience similar economic conditions must be considered carefully. There is therefore need instead to develop monitoring and evaluation systems that record gender specific information on men's and women's activities that identify benefits, costs, and constraints by gender and that determine men's and women's relative access to resources (land, capital, labour and technology). There is a need to generate country by country statistics, as evidenced from one country in Southern Africa cannot be used to make generalisation about another. The conceptualisation and measurement of key indicators with policy implications such as the activity rates of men and women in agriculture, must be appropriate comprehensive to produce valid and complete enumeration of all of men and women's activities. Research instruments should be designed to generate valid data and correct analyses, placing production in its broad micro and macro socio-economic context.

While women scientists tend to recommend women-oriented research, "the long run aim of any program is to promote sustained natural resource management and development with benefits to all regardless of gender or social status. What is required is that evaluators develop indicators that measure accurately the status of men and women and to make recommendations that will benefit both as participants in national development. These mechanisms should not be used to further sexual dualism in the market place but to reduce inequalities and create new opportunities.

Women's interests in natural resources will not be the same everywhere. They will usually be nested within a larger tangle of conflicting and complementary relationships between and within rural households. Whether or not ownership is legally demarcated, most rural people operate in overlapping domains of access and control on a variety of resources involving a complex array of activities and purposes. Technological changes in domains controlled by men drastically alter the terms of access, control, production, and ecological stability on shared lands and resources, or in women's separate places and activities. Aside from the differential effects of technology and land use change on men and women, the interests of different groups of women may diverge significantly. Among the factors that may divide women's interests are age, class, household composition, ethnic group, location and sources of livelihood. The proposed land user perspective can incorporate women as one of a number of valid client groups and active participants in agroforestry research and action programs. This approach can address women's distinct needs, constraints, opportunities and interests in agroforestry technology and land use innovations. Since it is based on a premise of dealing with multiple users and interests in any given place, the land user perspective can also accommodate both women's relationship to the larger community and the differences between groups of women within a given community. This approach combines an explicit concern for women's interests within the larger web of social and ecological relationships in which they live.

Women in poor rural households are burdened with significant responsibility for family subsistence, and are often the primary and in many female-headed households the social economic providers. However, their ability to fulfil this responsibility is significantly constrained by the limited (and declining) resources and means at their command, constraint that stems not merely from their race-class position but also from gender. These gender inequalities in access to resources take varying forms:

- intra - family differences in the distribution of basic necessities;
- women's systematically disadvantaged position in the labour market;
- their limited access to the crucial means of production, land, and associated production technology; and
- the growing deterioration and privatisation of the country's common property resources on which the poor in general and women in particular, depend in substantial degree of sustenance.

At the same time, the women are not always passive victims... many have reacted against their marginalisation and are today significant actors in grassroots initiatives for change. In particular, in response to a growing crisis of survival, poor rural women have emerged in the forefront of many ecology initiatives. These initiatives, which have developed into movements in several areas, articulate a growing resistance to existing approaches to development, and call attention to the critical need for an alternative approach which is regenerative rather than destructive of nature...a necessary condition for its sustainability in the long run. Indeed, the perspectives and insights offered by such movements, and women as important participants in them, need to be an integral part of an attempt to chart out an alternative.

In order to examine the nature of women's resistance to gender inequalities, in resource distribution and ideological representation, one needs to understand how women perceive these inequalities we need to take into account not only their overt protests but

also the many covert forms their resistance may take. At the same time, to significantly alter gendered structures of property and power, it appears necessary to move beyond 'individual-covert' to group-covert' (organised collective) resistance. These issues are examined here especially in the context of women's struggles for land rights and gender equality in Southern Africa. Although historically Southern African women have been important participants in liberation movements, these movements have not been typified by women demanding independent land rights or contesting iniquitous gender relations within the movements and within their families. Some recent challenges in this direction indicate that attaining gender equality in the distribution of productive resources will require a simultaneous struggle against constraining ideological constitutions of gender, including (in many regions) associated social practices such as *mutorwa*, (literally translated as a foreigner where a woman relocates from her natal home). And in both types of struggle (namely concerning resources and gender ideologies) group - covert resistance is likely to be of critical importance.

A feminist political ecology approach can be used to examine the relationship between the myriad social and economic spheres and biodiversity conservation. This demonstrate the need to survey the multiple uses of natural resources, the multiple users of these resources, the spatial and physical interactions of both with the environment, and the culturally distinct world views that direct various groups in their relations with the environment.

## 5. Conclusion

Agencies involved in management of natural resource should strive to create an enabling environment for local development activities. Without a natural milieu, favourably disposed to local initiatives, such initiatives are not likely to emerge. This means that in the policy arena, governments (aided by NGOs, and international donors) should encourage discussion of approaches that enable local communities to assess and address their needs for managing resources effectively and for gaining access to more secure livelihoods.

Community empowerment, as well as the elements of programmes and projects, will be significantly strengthened by involving local people in data collection as well as decision-making and implementation processes. Such involvement can encourage community awareness, understanding and commitment; facilitate decision-making consensus building and conflict resolution and build collaboration among outside researchers or development workers and the community. This co-operation can assist processes of empowerment and sustainable development using participatory methods local community members can readily identify and begin to address their most critical problems. Problems such as inadequate sources of income, poor health, polluted water, limited institutional capacity, low food productivity, insufficient fuelwood and lack of knowledge in specific areas.

By way of conclusion, women participate and contribute significantly to household reproduction, agroforestry schemes, forests conservation and other farming related activities. Despite this, they have been largely excluded from CBNRM and do not have adequate resources at their command. Feminist scholarship has drawn attention to the need for including gender-sensitive approaches to community based natural resource management research and development. The current debates on environmental



conservation have prompted synergies between environmental activists and women's rights activists, and the biophysical scientists and the social scientists. As the papers to be delivered in this conference will show, the centrality of gender in natural resource development and environmental conservation has fostered an interdisciplinary debate and collaboration and helped bring together a spirited clash of ideas and viewpoints. Some of the questions that need to be pursued further are:

- How do gender differences in natural resources exhibit and perpetuate themselves? How can CBNRM more meaningfully include women and address specific gender-sensitive issues?
- What are the factors that contribute to the apparent invisibility of women's labour and what adjustments need to be made in research design to ensure the documentation of their labour and the significance of their contribution?
- How can a fusion of science and ethno-science be effected, guided by a feminist perspective? What methodologies are most promising for investigating and documenting gendered knowledge?
- What are the parallelism between the invisibility of women's contribution and the nature of degraded resources? What role does this "hidden" dimension play in the maintenance, conservation, and use of plant genetic resources?
- To what extent is marginality, diversity and poverty correlated? What opportunity costs are borne by women as they nurture and conserve plant genetic resources and how can they be compensated for these costs?

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